

Fact Sheet #3: Perchlorate (ClO₄-)

Information about ADEQ and the Drinking Water Program can be obtained by calling the Drinking Water Section toll free at (800) 234-5677.

1. Ammonium perchlorate is a man-made inorganic salt that is a strong oxidizer which is used as a component of solid rocket fuel, munitions and in the pyrotechnics fireworks industry. Ammonium perchlorate in fireworks produces the blue colors. Perchlorate continues to be manufactured and used nationwide.
2. Ammonium perchlorate is very soluble and is mobile in groundwater and surface water. The chemical degrades very slowly in the environment.
3. Risk studies will determine whether or if there may be an impact to the environment or human health. Until the scientific studies are completed at the national level, we do not know the effects of low concentrations of perchlorate. Currently it is known that the Las Vegas Wash is transporting perchlorate contamination into Lake Mead which then feeds into the Colorado River.
4. A form of perchlorate has been used in medication for hyperthyroidism (Graves Disease). Potassium perchlorate disrupts the thyroid's gland's ability to properly utilize iodine to produce thyroid hormones.
5. Current location information on perchlorate contamination of groundwater and surface water in Arizona is limited since the chemical is not a regulated drinking water contaminant. Testing has been conducted by EPA along the Colorado River with results ranging from "not-detected" to 9 parts per billion. Other sampling conducted in Arizona along the CAP, in municipalities, Lake Havasu, Jose De Sonita River, Salt River, Verde River, and near some industrial parks ranged from "not-detected" to 6 parts per billion.
6. The Las Vegas area has groundwater contamination ranging from 630,000 parts per billion to 3,700,000 parts per billion. Utah has reported groundwater contamination ranging up to 200 parts per billion.
7. Laboratory methods to test for perchlorate could not get below 400 parts per billion detection level until the first part of 1997. Analysis of water samples conducted in August of 1998 used a modified laboratory method which is able to reach down to 1 part per billion using Ion Chromatography.
8. California currently has an interim health standard of 18 parts per billion. If results are above this level, water systems in California are required to remove that source from the drinking water system or to conduct public notification. California is able to do this since they have the legal authorities within their Department of Health.
9. There are currently no cost effective treatment technologies that can remove perchlorate from the drinking water, groundwater or surface water. Research is ongoing to find a cost effective treatment technology.
10. Risk studies on perchlorate and its effects on human health are underway, and a revised reference dose is anticipated to be completed by the US EPA by January of 1999. ADEQ is a member of the Interagency Perchlorate Steering Committee (IPSC) which is a national group headed by the US EPA. It is the goal of ADEQ to keep the communities in Arizona up to date on this emerging issue.

Additional information and updates on the issues of perchlorate can be obtained from the EPA Safe Drinking Water Hotline located in Washington, D.C. toll free at: (800)

426-4791. Updated information can also be obtained on the US EPA Perchlorate website located at <http://www.epa.gov/safewater/ccl/perchlorate/perchlorate.html>